Local Government Association

Association for the Conservation of Energy

CAG consultants

Energising procurement

National energy procurement category strategy

Foreword

Energy is one of the largest controllable overheads in many council buildings. To insulate councils from wider energy price trends, and to benefit from the huge opportunities presented by new energy technologies and business models, councils must look to gain greater control over this spend.

While financial savings are a principal driver for procurement strategies, a good strategy is much more than just financials and can link to wider social, economic and environmental benefits.

Financial savings can be maximised if you are not solely concerned with the unit price of energy. By investing in energy efficiency, improving energy procurement practices, and participating more actively in the energy market.

There are also opportunities for councils to generate income from their energy related activities.

- Reduce energy demand by retrofitting energy efficient measures; energy cost savings can be realised year-on-year.
- Generate energy within the council's portfolio to create income to offset the council's overall energy spend.

This strategy is designed to provide an overview of these opportunities, with ideas for how councils can minimise their costs and maximise the benefits for their local communities through their energy procurement actions.

The Councillor's guide (appendix E) also sets out how councils can take action to make a significant difference in this rapidly evolving sector.

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Deputy Chair, LGA Improvement and Innovation Board

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Vision

Councils collectively spend over £773 million each year on energy[1]; and unit costs for energy continue to rise.

Financial savings are therefore a principal driver for procurement strategies. But a good strategy comprises much more than financials and can link to wider social, economic and environmental benefits.

The energy sector is evolving rapidly with opportunities emerging for councils to get involved in generating and supplying energy, as well as purchasing it. This strategy is designed to provide an overview of these opportunities with ideas for how councils can minimise their costs and maximise the benefits for their local communities through their energy procurement.

Councils must look to gain greater control over their energy spend, to insulate them from wider trends and benefit from the huge opportunities presented by new energy technologies and business models. Councils are increasingly exploring options for greater independence to maximise their own capacities and capabilities within the current rules and regulations of the energy market. Such activities have enabled councils to raise revenues and leverage public-sector borrowing to drive green investment and encourage demand management.

This strategy is aimed primarily at council procurement officers, to help them understand the potential opportunities and challenges within the energy market. However, the strategy also provides links to wider council stakeholders, including energy and estate managers and sustainability teams, to help them understand the role of colleagues in procurement functions, finance officers and managers. Finally, it offers suggestions for councillors to support informed decisions.

1 Analysis of Porge data by the LGA suggests that local government spent £772.7 million on gas, electricity, fuel and mixed utilities in 2016/17.

Introduction

The Local Government Association's (LGA) National Procurement Strategy for Local Government was launched in 2014, setting out a vision for local government procurement and encouraging all councils to make savings, support local economies, engage in leadership and modernise procurement: http://lg-procurement.org.uk

Taking a category management approach

All councils are keenly aware of the need to reduce costs and to explore revenue generation opportunities wherever possible. To this end, councils are increasingly adopting a 'category management' approach as a starting point to identify key spend areas.

This strategic approach can reduce costs and increase overall value by reducing demand, simplifying the procurement process and aggregating spend to achieve economies of scale.

The LGA has already published category management strategies for three major areas of local authority spend; ICT, construction and social care. This energy category strategy will be the fourth in the LGA series.

Opportunities and challenges

The need for councils to ensure they are minimising costs and maximising benefits for their local communities through their energy procurement is ever more pressing; council funding has reduced drastically in recent years.

According to the LGA, councils in England delivered £10 billion of savings in the three years from 2011/12, and then had to find the same savings again in the following two years.[2] Following the 2017 Autumn Budget, the LGA reported that there was no new money ring-fenced for councils within the settlement and that councils still faced challenging funding pressures of £5.8 billion by 2019/20[3].

Energy is one of the largest controllable overheads in many council buildings and there are many opportunities to make savings and generate income through energy demand management and energy generation.

Anecdotal evidence suggests that many councils have reduced the number of people working in energy management roles. This reduction in personnel has ultimately led to a reduction in resources, knowledge and skills within councils and their ability to operate effectively in the energy market.

2 LGA, 2014, Under Pressure, how councils are planning for future cuts: www.local.gov.uk/under-pressure-how-councils-are-planning-future-cuts

3 LGA, 2017, Local Government Finance Settlement 2017/18: www.local.gov.uk/parliament/briefings-and-responses/local-government-finance-settlement-201718

The key energy related legislative driver for councils is the CRC Energy Efficiency Scheme. This is a mandatory carbon emissions reporting and pricing scheme to cover large public and private sector organisations in the UK that use more than 6,000MWh per year of electricity and have at least one half-hourly meter settled on the half-hourly electricity market.

Does the CRC apply to my council?
State funded schools were removed from the scheme in England from April 2013, which meant that around 80 per cent of local authorities were removed from the scheme. Understandably this was seen as a positive reduction in costs by finance managers, yet it is anticipated that there will be reductions in national government finance settlements to councils as a result.

While CRC will be abolished in 2019, it will be replaced by higher levels of Climate Change Levy (CCL) in order for the HM Treasury to recover the tax revenues lost by CRC. Further information on future rates of CCL has been published by the Department for Communities and Local Government (DCLG): www.gov.uk/guidance/climate-change-levy-application-rates-and-exemptions

The CRC has three primary elements:

1. **Emissions reporting requirement**
   Participants are required to measure and report their electricity and gas supplies annually, and the CRC registry calculates emissions of carbon dioxide (CO_2).
2. **A carbon price**
   Participants buy allowances for every tonne of carbon they emit. This means that organisations that decrease their emissions can lower their costs under the CRC.
3. **Publishing of information on participants' energy use and emissions**
   The energy use and emissions of all participants are published for each compliance year as part of the Annual Report Publication (ARP), which will also report emissions from previous years for all participants.

There is a clear financial incentive to perform well in the CRC, and implementing energy management will save money, can reduce carbon dioxide (CO_2) and wider green-house gas emissions, and improve reputation.

It is also important to note that the Climate Change Act 2008 is a key part of the Government's strategy to reduce CO_2 and greenhouse gas emissions, and ultimately councils and the wider public sector will need to play their part in its implementation.

Objectives

Local communities and taxpayers depend on councils to commission essential public services and to commercially manage suppliers.

Many stakeholders involved in the production of this strategy stressed the importance of ensuring value for money, but that this wasn't always about obtaining the lowest price. There are wider considerations, which are captured here under the themes of the National Procurement Strategy for Local Government: http://lg-procurement.org.uk

- Making savings
- Support local economies
- Leadership
- Modernising procurement

Making savings

Councils are dealing with significant financial pressures resulting from reductions in government funding and a rising demand for services.

The very nature of the energy market means that energy prices fluctuate over time. Reductions in energy costs can often be seen by finance teams and councillors as positive reductions in spend, even though government projections predict that energy prices will continue to rise.

Financial savings can be maximised if you think about more than just the unit price of energy. By reducing energy demand, through the retrofitting of energy efficiency measures, energy cost savings can be realised year-on-year.

By generating energy within the council's portfolio, income can be generated to reduce the council's overall energy spend.

Key considerations include:

- All council stakeholders, including officers, managers and councillors, should understand that when benchmarking, it is important to compare 'like with like' – for example:
  - comparing energy prices offered on the same day and using the same criteria
  - comparing the specifications and price when purchasing energy equipment, such as insulation, boilers and renewable energy technologies.
- Councils should be considering the overall cost of providing energy services (including the time and resource that is spent on projects within the council) and not just the capital outlay.
- Where possible, councils should produce forward forecasts of their energy costs and income generation; this will help to support the business case for decisions as to whether to progress with energy projects.
- Consider opportunities to reduce energy costs by streamlining processes for example through the use of e-billing validation. Where there are problems or mistakes on energy billing, go back to the supplier to ask them to sort it out rather than paying a third party.
- Best value can be achieved even if the overall spend does not reduce due to wholesale impacts of energy costs.

Supporting local economies

Councils need to maximise the economic, social and environmental benefits to communities from every pound that is spent.

The Public Services (Social Value) Act transformed the way public bodies buy services. All public bodies in England and Wales are now required to consider how the services they commission and procure might improve the economic, social and environmental wellbeing of the area. Further information, including a guide to the Act and case studies can be found on the Social Value Portal website: https://socialvalueportal.com

Guide to the Act: http://socialvalueportal.com/wp-content/uploads/2014/10/Social-Value-Services-Act-A-Brief-Guide_SEUK.pdf

Case studies: https://socialvalueportal.com/case-studies-2

The London Borough of Harrow refurbishes numerous social housing properties every year. While this work is both necessary and desirable in terms of reducing the council waiting list for housing, improving council owned assets, reducing CO_2 emissions and alleviating fuel poverty, the council wanted to maximise the benefits of the electrical and insulation refurbishment work through adding 'social value' (SV) elements. Looking beyond the price of each individual contract, the council included a SV assessment tool as part of the tender. Offers by bidders included:

- employment of 20 people from within Harrow area
- four new apprentices created or sustained as a result of the project
- 11 weeks of meaningful work-experience offered to young people
- up to 1000hrs of voluntary time offered to local community groups
- up to 50 per cent of contract value to be spent on local supply-chain providers
- 200 hours offered to clean and maintain local green infrastructure.

https://socialvalueportal.com/harrow-making-refurbishment-better

When procuring services, the following social value clauses could be included as part of tender specifications and contracts:

- Skills and associated apprenticeships; consider opportunities for this through the supply chain. Whilst opportunities may be limited for energy suppliers who operate nationally, meter service suppliers will have local operations and could be required to take on local apprentices.
- Energy audits; consider asking energy suppliers and Public Buying Organisations (PBOs) to provide these, to help you identify cost effective options to reduce energy consumptions.
- Support for local research and development; energy suppliers could be invited to support research at local higher education establishments on new and innovative ways of generating energy.
- Schools programmes; energy suppliers could be invited to run sessions with or provide resource to school children about reducing energy demand.
- Local energy bonds; you could look at offering local energy bonds to fund the development of renewable generation capacity (eg Swindon's solar bonds – see below); these enable green infrastructure to be developed locally whilst also offering a good return to investors.

HM Treasury has produced guidance for public sector bodies on how to appraise proposals before committing funds to a policy, programme or project. The Green Book: appraisal and evaluation in central government can be found on the Treasury website, and while focused on central government is applicable to councils appraising or evaluating a policy, project or programme.

www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent

Leadership

To be able to demonstrate leadership in this field council procurement teams need to increase their impact and influence across the public and private sectors.

Key considerations include:

Councils can look not just to cut their procurement costs but to reduce the need to procure energy in the first place through investing in energy efficiency retrofit and procuring clean energy wherever possible.

Councils have a role to play in setting an example to inspire and influence others, both within their communities and more widely.

Councils, along with the LGA and the National Advisory Group for Procurement (NAG), have a significant role in sharing best practice and actively promoting collaboration between councils and the wider public sector. This could lead to councils changing the market and not accepting standard offers and terms and conditions from suppliers.

Councils can demonstrate leadership to others in their community by extending their procurement services to external clients, as seen with the London Borough of Islington[4] who offer a range of energy services to cross-sector customers. This could also involve offering good value, affordable energy contracts to schools, social housing and the voluntary sector, as well as a good value energy supply deals to local people as seen with Nottingham's establishment of an energy supply company, Robin Hood Energy: https://robinhoodenergy.co.uk

Councils need to ensure they have both the appropriate capability and capacity within their organisation, and that they have efficient back office operations (potentially achieved through collaboration with other councils).

Councils should review facilities management outsourcing and private finance initiative (PFI) contracts to consider opportunities relating to the provision of energy related services.

Modernising procurement

Councils can respond to financial pressures through commercialisation and income generation. Councils' procurement teams are more commercially minded, and understand and realise benefits from all funding streams, including how contracts can be developed to generate income.

Council procurement teams needs to modernise in terms of scope, practices and procedures and use of technology.

Scope

In view of the rapidly evolving nature of energy generation and supply in the UK, with a much wider range of suppliers and scope for localised generation, there is scope for council energy contract management to be broadened out to include energy efficiency, generation and electricity demand side response, all as part of a single contract:

- items such as energy efficiency which may traditionally have been ancillary to the main contract should become part of the core
- suppliers could be asked to include in their supply contracts actions to involve the council in demand response – the council can then earn income by participating in the electricity capacity market.

4 http://democracy.islington.gov.uk/documents/s4644/Exec%2018%206%2015%20Procurement%20Strategy%20for%20Energy%20Purchasing%20final.pdf?utm_content=assemblyhall.studioparallel.co.uk|referral

Practices and procedures
Energy contracts should have the flexibility to accommodate changes, for example with innovation clauses to enable increased efficiency without having to renegotiate contracts. For example, to accommodate changes to academies and schools working on energy independently; accommodating the reduction in load from switching to LEDs, portfolio rationalisation.

Councils should ensure that management fees are structured in a way that ensures that suppliers are incentivised to help the council save money, rather than use more.

Collaboration should not only involve other councils, but also the wider public sector, working together through joint property vehicles to achieve best value, or using tried and tested procurement frameworks that can be adapted to specific circumstances.

Technology
Transactions should be primarily electronic, with a move away from paper based systems, and the use of automatic meter reading and building management systems (BMS).

Market size and spend analysis

Opportunities

Energy is one of the largest controllable overheads in many council buildings and there are many opportunities to make savings through energy efficiency and generate income through energy generation.

The energy sector has seen dramatic change in recent years, and there are increasing opportunities for councils to be not just energy consumers, but:

- energy producers and generators:
  - through renewable energy installations within council and wider public sector portfolios, such as Birmingham's District Energy Scheme[5], or within the locality such as Swindon's Solar Bond scheme[6]
  - through participation in the Electricity Capacity Market through demand side response, often in combination with investment in energy storage capacity; examples include Rotherham[7], Gateshead[8], Hounslow[9] and Camden[10] councils.
- energy suppliers:
  - through white label energy supply partnerships, as seen with Peterborough Energy[11]
  - through the development of white label switching services, such as Portsmouth City Council[12]
  - through the establishment of energy supply companies such as Nottingham's Robin Hood Energy.[13]

Details of these activities, plus additional examples of council activities in the energy sector, can be found in the 'Themes' section of this strategy.

Challenges: delivering ideas into reality

However, the energy market is complex and there can be a lack of understanding on where to start, how to build a business case and how to then implement ideas. Councils should therefore:

Find out what your energy supplier or PBO may offer as part of your service contract.

Establish a baseline position and gain a thorough understanding of their portfolio and assets.

5 http://business.engie.co.uk/search/?search=birmingham+district+energy

6 www.swindon.gov.uk/download/downloads/id/1884/your_council_booklet_201617.pdf

7 www.flexitricity.com/en-gb/case-studies/rotherham/

8 https://networks.online/gphsn/news/1000441/district-energy-scheme-gbp1m-boost-dsr

9 www.edie.net/news/10/Hounslow-installs-UK-s-first-solar-array-with-battery-storage/

10 http://news.camden.gov.uk/solar-energy-pilot-project-aims-to-reduce-fuel-poverty

11 www.peterboroughenergy.co.uk

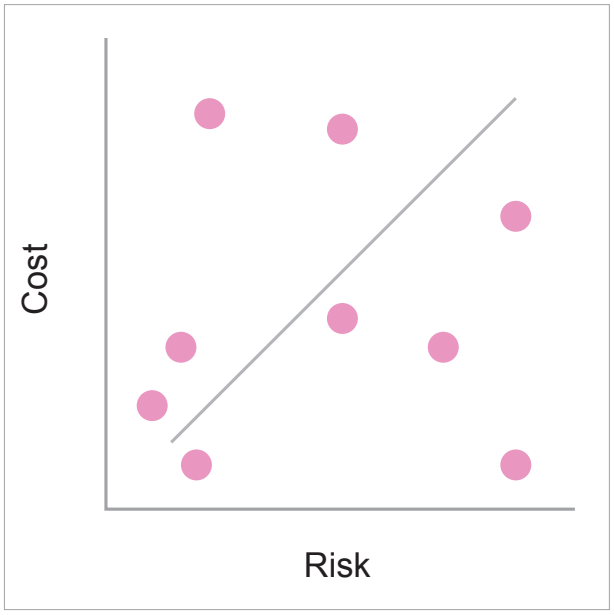
12 www.portsmouth.gov.uk/ext/news/putting-our-energy-into-saving-you-money.-switch-and-save-today!.aspx

13 https://robinhoodenergy.co.uk

The Carbon Trust offers a range of support services to assist you in this process – assess where you are on the energy management journey with the energy management matrix and assessment workbook: www.carbontrust.com/resources/tools/energy-management-self-assessment-tool

Assess what options are available to reduce energy demand and to generate energy, and consider the resource intensity, capital outlay and risk factors associated with each action.

Quite often councils are missing the 'low hanging fruit' and focusing on high profile activities. This is true for all sectors. For example, some councils have focused on renewable energy projects before looking at opportunities to reduce energy spend through energy retrofit projects. Councils should always consider the resource intensity, capital outlay and risks associated with projects.



Develop a business case, including reference to social, economic and environmental factors.

Consider procurement options, such as OJEU and frameworks.

Benchmark costs and wider service offerings from suppliers.

Consider finance options, both from internal and external sources, including Public Works Loans Board finance.

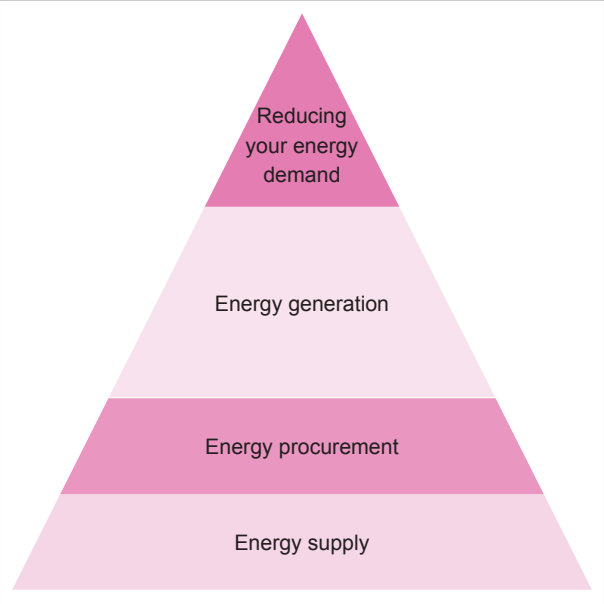
Nottingham County Council's Carbon Management Plan details the criteria they use to focus their priorities:

- immediate implementation of a programme of measures where these save the county council money immediately, or in the short term (less than five years)
- implementation of further activities and measures which represent the best return on investment in the longer term (beyond five years)
- ensure wherever possible that decisions and designs implemented now do not compromise our ability to make carbon savings in the future. Examples include the design of new buildings
- focus on areas and activities which have the highest carbon emissions, and those with the greatest scope for reductions, with a particular focus on cost per tonne of carbon saved
- activities which attract external funding and are therefore more financially attractive as a result.

www.nottinghamshire.gov.uk/media/109731/carbonmanagementplan.pdf

Themes

Any category management approach involves demand management and challenges the need to purchase goods or services. Therefore, this Energy Category Management strategy follows the principle of the energy hierarchy.



Reduce your energy demand through energy efficiency retrofit and behaviour change.

Generate (clean) energy where possible; use storage to maximise the value from this, and seek to take part in the electricity capacity market to generate income.

Procure the remaining energy needed from external suppliers, aiming to achieve best value and social value.

You can then look at **supplying homes and businesses** in your area.

Reducing your energy demand

You can reduce demand for energy in a variety of ways:

- **monitoring and targeting** energy consumption across the council portfolio
- **engaging with council staff**
- **retrofitting energy efficiency measures** across the council portfolio
- implementing **Energy Performance Contracts** (EPCs)
- implementing **energy efficiency procurement standards.**

Monitoring and targeting

Monitoring and targeting enables you to understand how energy is being used across your portfolio. It can help you identify avoidable energy waste and where there may be opportunities to reduce consumption.

Data collection can be manual, automated, or a mixture of the two. Once a monitoring and targeting scheme has been set up, its routine operation should be neither time-consuming nor complex, and will underpin your energy management activities.

Technology includes:

- Advanced Meter Readings (AMR)
- smart meters
- heat metering
- building energy management systems (BEMS)/building management systems (BMS), including the use of artificial intelligence (AI).

Key considerations
You cannot effectively manage what you do not measure.

Investigate what your energy supply contract can offer as part of the service to your organisation. This may help to reduce resources required from your organisation. If your current supplier does not offer these services as part of your contract, ask whether they can be included.

Consider including these requirements the next time you procure your energy supply contract, and develop a checklist for procurement tenders, including requirements around monitoring and targeting and data management, and how this can support billing activities.

Consider how data can be collated and aggregated and how it can then be used as part of wider energy management activities, and how data can be usefully shared across sites and external clients such as schools.

Consider what resources are required to verify the savings associated with any installation.

Monitoring and targeting can be delivered in-house or by an external provider.

- Some councils out-source monitoring and targeting through a total facilities management (TFM) contract, although others disaggregate monitoring and targeting services so that contracts can to be awarded to smaller, local businesses. This may be more convenient than in-house options, but it does not offer the value of building internal expertise.
- Some councils use bureau services which offer data collection, validation, forecasting, monitoring and reporting services. This can free up staff to work on implementing wider energy saving activities, rather than number crunching.
- The London Borough of Islington have an in-house service. Three energy conservation officers are responsible for monitoring and targeting of buildings. The technical team within the Energy Services team looks after 150 sites: three energy conservation officers are responsible for monitoring and targeting of buildings. Previously the team worked on a geographical basis, but are moving to a 'sector' model by building type. Each building within the council's portfolio is visited at least once per year (dependent on size, importance and usage) and energy saving opportunities are identified. The team works closely with site managers. This embedded knowledge enables the team to influence council policy and strategy.

The London Borough's Energy Group (LBEG) looked at what to consider if you outsource monitoring and targeting:

- What does the contract cover? Does it cover the whole of the council portfolio or are certain categories excluded, such as schools and housing?
- What can the organisation offer in terms of flexibility?
- Define service level agreements and update these periodically.
- Do keep some expertise in-house in order to challenge your monitoring and targeting service provider.
- What should we ask for in a TFM contract?

For resources relating to monitoring and targeting, please see Appendix A1.

Case studies

As described above, the **London Borough of Islington** monitoring and targeting is delivered by an in-house team of energy conservation officers. The team had to demonstrate the cash benefit of their service. The team calculated that for every £1 spend on monitoring and targeting, there is a £3.40 benefit. Tracking this data has been vital in protecting the council's budget spend, and extending services to neighbouring councils has provided income generation opportunities.

The use of AI in managing energy is an emerging market and something that some councils are beginning to explore in partnership with the private sector.

DeepMind – Google's artificial intelligence lab – has developed algorithms that can anticipate energy demand and supply. This has enabled Google to cut the amount of energy used by its enormous cooling systems in its server-filled data centres by 40 per cent, ultimately cutting the data centres' overall electricity consumption by 15 per cent: http://uk.businessinsider.com/google-deepmind-wants-to-cut-ten-percent-off-entire-uk-energy-bill-using-artificial-intelligence-2017-3

In 2013, **Demand Logic** launched its system to make sense of the vast quantity of data produced by a BMS. A device is installed alongside the BMS to stream data from it about the building and services. This data is uploaded to Demand Logic's cloud server, where its software processes and analyses it, producing graphical representations of the building's performance. The system highlights issues affecting energy use, occupant comfort and maintenance, and provides an online collaboration tool to resolve problems: www.betterbuildingspartnership.co.uk/bbp-members-use-big-data-improve-comfort-and-efficiency

Employee engagement

Council staff working across the organisation will have an influence over energy consumption. Therefore, a strategy to engage with users will need to be developed and implemented: you want them to understand and use your procurement standards, and you need to make sure that procurement contracts for energy related equipment include the information or training needed so that council staff can use the new equipment effectively. This activity will involve creating an energy awareness culture, similar to the now embedded health and safety culture.

Key considerations

Investigate what your energy supply contract can offer as part of the service to your organisation. This may help to reduce resources required from your organisation. If your current supplier does not offer these services as part of your contract, ask whether they can be included. Consider including these requirements the next time you procure your energy supply contract.

For resources relating to employee engagement, please see Appendix A2.

Case studies

Bristol City Council has taken part in SmartSpaces, an EU-funded project to save energy in public buildings using ICT. The SmartSpaces reports that are produced are an efficient method of transferring complex energy data into a communication channel which is clear, accessible and tailored to the intended recipient. They are beneficial to a range of users including building and facilities managers, bursars, senior executives and general staff. In particular, the Green Finger report is intended as a staff engagement tool and shows a range of visualisations and information and guidance on reducing a building's consumption: http://smartspaces.eu/de/home.html

Retrofitting energy efficiency measures across the council portfolio

This involves the installation of a variety of energy saving measures, including:

- fabric insulation (cavity wall insulation, internal and external wall insulation)
- glazing upgrades
- heating system and boiler replacement
- lighting upgrades to LEDs, including both internal lighting and street lighting.

Key considerations
Use Display Energy Certificates (DEC) to assess actual and potential performance of buildings, and look at implementing the measures suggested within the accompanying advisory report.

Investigate what your energy supply contract can offer as part of the service to your organisation. This could include audits of buildings. If your current supplier does not offer these services as part of your contract, ask whether they can be included. Consider including these requirements the next time you procure your energy supply contract.

Consider a holistic multi-measure approach rather than the installation of individual measures. Whilst more challenging, it will be easier to obtain support for those measures with longer payback periods when they are combined with measures with quicker payback periods, and this will be more cost effective in the long term.

Consider what resources are required to verify the savings associated with any installation.

While councils are not responsible for paying energy bills of council housing tenants, energy efficiency activity can help to alleviate fuel poverty, and reduce energy consumption in communal areas.

Finance is available from a wide range of both internal and external sources, including Salix finance from the Carbon Trust.

There are a wide range of OJEU compliant frameworks available to support activity in this area, including RE:FIT (see section on energy performance contracts below).

For resources relating to retrofitting energy efficiency measures across the council portfolio, please see Appendix A3.

Case studies

The Greater Manchester Combined Authority (GMCA) has signed a Memorandum of Understanding (MoU) with Salix to provide at least £10 million, with 0 per cent finance, over three years for Greater Manchester low carbon demonstrators. Business cases have been developed for 379 council buildings, including schools, across five councils totalling a £19 million investment opportunity.

A growing number of councils are implementing LED (Light Emitting Diode) street light replacement programmes to help reduce energy costs and carbon dioxide emissions. LEDs have many benefits:

- they consume 60 per cent less energy than older units and pay for themselves within approximately eight years of installation
- they last four times as long and are cheaper and easier to maintain
- they are easier to control, including dimming lights at selected times to maximise energy efficiency
- they reduce light pollution because the light is focused onto roads and footpaths.

South Gloucestershire Council has spent £14 million in its 'Invest to Save' LED street lighting replacement project and are saving approximately £1 million a year. It is important to note that while LEDs can pay for themselves in eight years, there are additional procurement and delivery costs to take into consideration: www.southglos.gov.uk/transport-and-streets/streets/road-and-traffic-management-information/lighting-street-lights/led-street-lighting/

Solihull Metropolitan Borough Council begin a phased upgrade programme of street lighting in 2014. In two years, the council has replaced over 5,500 Mercury Blended Filament Units (MBFUs) with LEDs on residential roads, as a result of an EU directive prohibiting the sale of MBFUs. The project, funded through the Local Transport Plan and internal council monies, cost around £2.7 million and has resulted in energy cost savings of around £140,000 per annum and has saved almost 1,200 tonnes of carbon dioxide (tCO_2). Consideration was given to the impacts on crime levels in the area, and the council worked with the local police force.

The work programme has exceeded its original aims and objectives, and has led to further activity:

In September 2016, the council began work to replace 5,275 main road lanterns with LEDs. The project is estimated to cost just under £2 million and is being funded through existing internal budgets. The project should result in energy savings of approximately £275,000 per annum and a saving of 1,500 tCO_2. This project should be completed by the end of March 2018.

By 2024, the council hope to have moved all of their 24,000 street lighting units over to LED technology. This should result in the council's energy budget falling by 52 per cent from £1.26 million to £612,000, and carbon emissions falling by 43 per cent from 6,854tCO_2 to 3,931tCO_2.

This case study showcases how council service areas can improve their service offerings (not turning off lighting during the night), whilst at the same time providing financial savings through both reduced energy bills and maintenance costs, to alleviate budgetary pressures: www.solihull.gov.uk/Resident/Parking-travel-roads/street-lighting-replacement-programme

In 2016, **Kent County Council** commenced a three-year work programme to convert 118,000 street lights to LEDs. The work programme is expected to cost £39 million, and Salix has provided the council with £27 million of finance, which was instrumental to the financial viability of the project. It is predicted that the work programme will result in annual savings of £5.5 million: www.kent.gov.uk/roads-and-travel/what-we-look-after/street-lights/led-street-lights#

Energy Performance Contracts (EPCs)

Energy Performance Contracts (EPCs) involve a partnership between an organisation and an EPC provider to improve the energy efficiency of buildings and facilities, including street lighting. A basic EPC will involve the provider identifying and investing in energy saving measures for the council, and providing a guarantee of their energy saving performance. Contracts can result in substantial cost savings and carbon emissions reductions. Contracts may also include energy generation measures and hence offer the potential for income generation.

EPCs have implemented for several years in the United States and Canada and they are now becoming more popular in the UK. Initially EPC providers had focused on the NHS, but have now begun to include the Ministry of Defence, local government and university property portfolios.

Key considerations

EPCs can have a strong business case and offer organisations a range of attractive benefits including:

- guaranteed energy savings
- a reduction in backlog maintenance levels, maintenance and other running costs
- reduced CO_2 emissions, and in turn CRC costs (if applicable) and future CCL costs

- creating the opportunity for renewable energy generation and income from the Feed In Tariffs (FITs) and Renewable Heat Incentive (RHI) schemes
- reducing the impact of future energy price rises through significantly reducing energy use.

Do you have the relevant skills or access to expert advice (where required) to support the implementation of an EPC?

There are a range of OJEU compliant frameworks available (see below).

For resources relating to energy performance contracts, please see Appendix A4.

Case studies

RE:FIT is a procurement initiative for public sector organisations wishing to implement energy-efficiency and local energy-generation measures across their premises and support services. The programme is based on an EPC model where providers will guarantee the level of energy savings to public sector organisations, verifying and monitoring this throughout the whole term of the contract.

Nationally, RE:FIT has worked with nearly 250 public sector organisations, contracted over £140 million of retrofit projects (approximately 800 projects) with annual savings of 50,000tCO_2 and reduced energy bills by £10 million.

The programme helps by enabling a range of public sector organisations, including councils, government departments, schools, universities, NHS, leisure centres and museums, to implement retrofit projects and achieve large financial savings through two principal means:

- a framework of 16 pre-qualified providers required to adhere to pre-agreed core contract terms (which saves time and resources for public sector organisations seeking to procure retrofit works and guarantee energy savings)
- expert teams (one specific to London, one covering the rest of England and one specific to Wales) which provide the end-to-end support needed to get projects up and running and successfully implemented.

The framework covers a range of energy efficiency retrofit and local energy generation measures to enable a wide range of improvements. This includes projects such as energy efficient street lighting, district heating, generation projects such as ground mounted PV and the ability to tackle areas such as energy storage solutions.

Energy efficiency measures such as:

- provision and installation of new equipment
- optimisation of equipment (including existing equipment)
- provision of related services
- maintenance in relation to any of the above (including water related solutions).

Energy generation measures such as:

- provision and installation of new equipment
- optimisation of equipment (including existing equipment)
- provision of related services
- maintenance in relation to any of the above.
- Associated works and services (including design) in relation to any of the above. Financing in relation to any/all element(s) of a project.

The RE:FIT teams can provide specialist advice and support, a range of best practice information, including case studies, access to previous RE:FIT participants to share knowledge, benchmarking and information on project costs, savings and carbon reductions.

RE:FIT National is run by Local Partnerships, which is a joint venture between HM Treasury and the LGA.

For more information and case studies, please contact Local Partnerships on 0792 0702 297, nationalrefit@local.gov.uk or visit: www.localpartnerships.org.uk

RE:FIT London is run by the Greater London Authority (GLA). For more information and case studies, please contact refit@london.gov.uk or visit: www.refit.org.uk

Energy efficiency procurement standards

Crown Commercial Service notes that 'all public procurement must be based on value for money, defined as 'the best mix of quality and effectiveness for the least outlay over the period of use of the goods or services bought'.'

Key considerations
You should consider the use of:

- Display Energy Certificates to review portfolio changes – eg disposing of energy inefficient buildings and leasing of new buildings
- energy efficiency standards across wider procurement functions, including electrical equipment.

While local authorities do not qualify for tax relief on energy efficiency investments, consider the purchase of products from the Energy Technology List (ETL) because these have been included in the list on the basis that they provide cost-effective energy savings.

For resources relating to energy efficiency procurement standards, please see Appendix A5.

Case studies

Durham County Council's 'Sustainable Buying Standard: Electrical equipment (non-ICT)' commits the council procurement team to consider the environmental, social and economic impacts of products and services. The council recognise that by purchasing the most energy efficient, appropriate, and durable electrical appliances and equipment, substantial savings can be made in terms of both cost and environmental impact: www.durham.gov.uk/media/7909/Sustainable-Buying-Standard-Electrical-Equipment/pdf/SustainableBuyingStandardForElectricalEquipment.pdf

Energy generation

The UK's energy sector, in particular the electricity sector, is currently experiencing a period of unprecedented change. Established low carbon technologies, such as solar PV, are rapidly evolving to become more affordable and efficient; meanwhile, new transformative technologies, such as battery storage, are emerging and maturing. Responding to a demand for more local control over energy, the energy regulator is looking at ways it can make the energy market more accessible (including to councils).

These changes present new opportunities for councils, which can generate revenue and reduce costs through generating their own (clean) energy either through assets sited on buildings and land in their own portfolio or in the local area.

There are further revenue and cost saving opportunities through:

- energy storage – using batteries to store generated electricity to be used when demand is high
- participating in the electricity capacity market.

Generating energy

There are a number of options for generating energy at a local level, including:

- combined heat and power (CHP)[14] and district heating systems
- electricity generation from photovoltaics or wind turbines
- energy from waste, which involves the recovery of renewable energy in the form of electricity and/or heat from the controlled incineration of residual waste or anaerobic digestion.[15]

Key considerations

It is generally much more cost effective to reduce energy demand (through energy efficiency) than to generate the equivalent amount of energy. Therefore, before investing in energy generation technologies, it is prudent to ensure that all cost effective energy efficiency retrofit opportunities have been exhausted. However, councils should also consider pursuing the development of energy generation in parallel with, or as part of, a broader energy programme that will help to increase the cost effectiveness of these technologies.

Councils should investigate what support their energy supply company or PBO can offer as part of their service. This may include resources to help you asses your portfolio's energy generation capabilities. If your current supplier does not offer these services as part of your contract, ask whether they can be included. Consider including these requirements the next time you procure your energy supply contract.

There are various options open to councils for raising finance for large scale energy generation projects, including prudential borrowing, private investors, community share offers or council bonds (see Swindon example below).

Some councils have established an energy services company (ESCOs) to deliver and manage energy generation schemes; these can also be used to supply energy to others within the local area (see the energy supply section of this strategy for further information). This can be either as an arm's length organisation or in partnership with a private or community ESCO.

Investing in 'energy from waste' facilities can help councils meet targets for the reduction of waste going to landfill and can be very cost effective in the long run (see Suffolk example, below).

There are a number of OJEU compliant frameworks available, including those from PBOs and Local Partnerships.

Councils with energy generating assets can investigate the potential for Power Purchase Agreements to secure revenue for any surplus electricity generated (see Bristol example, below).

For resources relating to generating energy, please see Appendix B1.

Case studies

Swindon Solar Bond. In 2016, Swindon Borough Council launched the UK's first ever 'Council Solar Bond' to finance a community solar farm. The council, in partnership with peer-to-peer investment platform Abundance, created the bond to bring together local residents and small investors from across the country to invest in the Swindon community solar farm. The farm is managed by council-owned Swindon Common Farm Solar CIC. It cost £4.8 milliion to build, with £3 million coming from the council's investment and the remaining £1.8 million from small investors locally and across the country.

14 Combined heat and power (CHP) is a highly efficient process that captures and utilises the heat that is a by-product of the electricity generation process. By generating heat and power simultaneously, CHP can reduce carbon emissions by up to 30 per cent compared to the separate means of conventional generation via a boiler and power station.

15 Anaerobic digestion (AD) is the breakdown of organic material by micro-organisms in the absence of oxygen. AD produces biogas, a methane-rich gas that can be used as a fuel, and digestate, a source of nutrients that can be used as a fertiliser.

The minimum investment stake was £5 with investors benefitting from an effective rate of return of 6 per cent. Sixty-five per cent of the distributable profits from the project will go towards funding local community initiatives, with the remainder going to the council:
www.swindon.gov.uk/download/downloads/id/1884/your_council_booklet_201617.pdf

Bristol City Council – power purchase agreement with Bristol Sport. In 2016, Bristol Sport signed a power purchase agreement with Bristol City Council to purchase energy generated from new solar panels installed on the west stand of the Ashton Gate Stadium. The council has funded the new 117kW solar installation as part of the stadium's refurbishment. This will produce clean energy to be sold to Bristol Sport at a reduced rate for use on site. In exchange, the council will gain revenue from supplying the power, alongside an income from the Feed-in Tariff for generating the electricity. This model is expected to deliver savings of £150,000 over the 20 year scheme – or £7,500 annually – on the stadium's energy bills, cutting carbon emissions by 20 per cent in the process. In addition, the council will recoup the cost of the system and make a small surplus before passing ownership of the system to the stadium owners after 20 years:
www.solarpowerportal.co.uk/news/bristol_city_council_completes_ppa_project_at_local_stadium

Berwickshire Housing Association's wind farm. A Scottish housing association has become the UK's first to develop a wind farm in order to fund the construction of homes for social rent. Berwickshire Housing Association (BHA) and its joint venture partner Community Energy Scotland launched the wind farm, based in the Scottish Borders, in early 2017. The turbines, named Fisherman Three, are expected to generate £20 million for BHA over the next 25 years by supplying energy to the National Grid. The 1,700-home landlord hopes to build 500 new units with this money: www.insidehousing.co.uk/scottish-association-launches-wind-farm/7019432.article

Suffolk County Council's energy from waste facility uses modern, proven energy from waste technology to produce enough electricity to power 30,000 homes. It has capacity for 269,000 tonnes of waste a year, which is enough to deal with household waste from across Suffolk, plus some business waste. It is estimated that, over the life of the 25 year contract, using energy from waste will cost the tax payer at least £350 million less than continuing to landfill:
www.suffolkefw.co.uk

Birmingham District Energy Scheme. Since 2006 a partnership between Cofely, Birmingham City Council, Aston University and Birmingham Children's Hospital has been providing low carbon heat, electricity and chilled water to a range of buildings in Birmingham. More recently, a new CHP energy centre at the refurbished Birmingham New Street station is being joined to the scheme. Council buildings connected to the scheme include: Birmingham Council House, Town Hall, Library of Birmingham, REP Theatre, National Indoor Arena and International Convention Centre. Current capacities are 60MW of heat, 4.9MW cooling and 6.7 MWe of CHP. The scheme avoids the emission of 12,000 tonnes of CO_2 per annum:
http://business.engie.co.uk/search/?search=birmingham+district+energy

Energy storage

This involves the installation of battery systems linked to energy generation technologies. This can enable councils to use more of the energy they generate themselves and potentially to participate in the electricity capacity market through demand response activities.

Key considerations

This is an emerging technology and payback periods are currently long – but expected to

fall rapidly in the next few years, making this technology an attractive option for councils with their own generation assets.

The main benefit of electricity storage to councils is the ability to shift energy supply from off-peak times to peak demand times. This leads to:

- cost savings, avoiding purchase of electricity at peak times
- commercial opportunities to supply energy generated at off-peak times to the grid during peak times (weekdays 4.00pm-7.00pm), which is important in the move to time-of-use tariffs.

For resources relating to energy storage, please see Appendix B2.

Case studies

In 2016, the **London Borough of Hounslow** invested £2 million in a 1.73MW photovoltaic array on the roof of Western International Market near Heathrow. This is connected to four 60kW Tesvolt lithium-ion batteries. The market houses 80 fresh food and flower retailers, with an energy demand of 3.5MWh per year for refrigeration. The system will meet half the site's electricity demand and save the council £143,000 in the first year; income will be generated by Feed-in Tariff payments and, in total the council will be better off by £247,000 a year. The scheme was delivered through the RE:FIT London programme (see the Energy Performance Contracts (EPCs) section of this strategy for further information): www.edie.net/news/10/Hounslow-installs-UK-s-first-solar-array-with-battery-storage

London Borough of Camden is trialling battery storage and solar PV in the homes of 41 low income residents. Batteries are charged overnight on Economy 7 (cheaper night-time electricity), for use in the morning and then recharge from the PV during the day, for evening use. Finance has been provided by Northstar Solar, using debt capital rather than equity, with repayments via a 'pay as you save' mechanism on the electricity meter: http://news.camden.gov.uk/solar-energy-pilot-project-aims-to-reduce-fuel-poverty

Demand side response

Demand side response (DSR) involves increasing, reducing or shifting electricity demand. This can happen through things like onsite generation, heating and cooling systems, business operations and appliances, and battery storage.

Key considerations

There are two primary benefits from demand side response:

- **Making money**: creating new revenue streams by participating in demand side response schemes. There are range of schemes through which councils can get paid to increase, reduce or shift their demand to help balance the electricity transmission system, manage local or national constraints and to manage market risk.
- **Saving money**: reducing electricity costs through reducing power consumption at peak times and avoiding peak network charges. Electricity prices fluctuate, reflecting seasonal changes and daily demand. Councils opting for a variable price contract can save by reducing their power consumption at peak times. This can also reduce costly network charges.

There can also be other benefits, such as improving the resilience of own generation, improving energy management systems, and supporting environmental ambitions.

Councils can take part in these services directly or through a 'demand side provider'. A demand side provider is an organisation – such as an electricity supplier, an aggregator or third party intermediary – who can help councils and others to participate in DSR.

For resources relating to demand side response, please see Appendix B3.

Case studies

The **Gateshead District Energy Scheme**, owned by Gateshead Council, will receive in excess of £60,000 per year for 15 years by providing DSR to National Grid through a new partnership with demand side provider Flexitricity. Gateshead Energy Company, the operator of the Gateshead District Energy Scheme, will utilise its combined heat and power system to add 4MW of electricity capacity to a virtual power plant managed by Flexitricity. The scheme, due to begin operating in 2017, will provide low-cost, low-carbon heat and power to homes, public buildings and businesses across the centre of Gateshead. Gateshead Council is one of the first councils to be involved in DSR: https://networks.online/gphsn/news/1000441/district-energy-scheme-gbp1m-boost-dsr

Colchester Hospital University NHS Foundation Trust was one of the first NHS Trusts to see the potential of DSR for generating revenue while helping balance supply and demand across the grid. The trust were approached by demand side provider KiWi Power. It proposed a scheme to install hardware and software that would help the trust to realise the full potential of its generators and provide DSR for National Grid to call upon. Before DSR they routinely ran their generators to test them for a set 10 hours a month. Under DSR, they now switch to their own generators at times when the system requires it. This proves the resilience of their generators, and they also receive a payment for being available and for the electricity that they export to the grid. The trust has received over £100,000 in annual revenue, with set-up costs paid for by KiWi Power. The link with KiWi Power has also enabled them to engage more effectively (through automation) with 'Triad management' (winter peak tariff avoidance). This has earned them around a £50,000 rebate per year: http://powerresponsive.com/nhs-trust-benefits-from-demand-side-response

Rotherham Metropolitan Borough Council's head office has standby diesel generation assets designed to provide resilience in the event of mains electricity failure. By connecting these assets to Flexitricity's DSR portfolio, the council earns additional revenue (over £30,000 per year) and improves security of supply. Flexitricity pays Rotherham for making its capacity available during agreed periods. Further payments are made for power delivery during demand-response events. Flexitricity also remotely starts generation during likely 'triad' periods. This lowers site consumption and reduces the triad charges on the site's electricity bills: www.flexitricity.com/en-gb/case-studies/rotherham

Energy procurement

Unlike many other category management approaches, the volatility of the energy market leads to additional complexities and risks when councils are procuring energy. A council's attitude to risk and the market conditions at the time they choose to go to market will make a difference to the price that they can achieve.

There are three main contract options for councils to take:

- Traditional fixed price contracts, with prices fixed on a given day from the market. Such contracts are no longer seen as best practice and can lock councils into artificially high prices for sustained periods of time.
- Flexible fixed price contracts can allow a risk management strategy to be adopted.
- Flexible variable price contracts; does not allow for any budget certainty.

Councils can procure their energy using their in-house capabilities or, if personnel and skills are not available, via a Public Buying Organisation (PBO). Councils may also choose to use a PBO to gain the additional benefits and experience they may provide. When working with a buying organisation you should be focusing on the advice they can give you on what is a good time to go to market, how best

you can package your requirements, and what attitude to risk you have; rather than just what unit price they can get you.

Whatever type of approach is taken it is essential that the council, and the finance director in particular, understand that energy is not a fixed cost about which little can be done. The cost to the council of their energy is made up not only of current prices, and the nature of the contract but, and very importantly, how the energy is managed across the council portfolio. Using 10 per cent less energy is of greater benefit than a five per cent reduction in price, particularly given that saving will remain whilst the price reduction may only be temporary.

You can procure energy in one of three ways:

1. **Internal procurement of energy,** either by:
    a. the authority procuring energy, generally electricity and gas exclusively for itself, negotiating directly with potential suppliers
    b. internal procurement of energy with several authorities working collaboratively – similar to the above but by working jointly with a number of councils and external clients, economies of scale may be achieved.
2. **Using professional buying organisations**, including public buying organisations (PBOs) and other intermediaries such as a broker. Usually with additional services.

Internal procurement of energy

A number of councils purchase energy directly using their own in-house resources. This means that the council must have in-house procurement skills focussing on energy and contract management. Contracts will typically be for a fixed period of time and will need to be reviewed ahead of time with an understanding of the changing energy market.

There are numerous examples of councils working collaboratively to procure energy to achieve economies of scale. This is generally led by one council, while the wider consortium is usually made up of neighbouring authorities. This has often been the genesis of PBOs (see below).

Key considerations
The length of time for the contract is very important and presents a balance between stability and value for money.

The council must determine the key drivers for procurement. In addition to value for money, these can include the carbon footprint of the supply, environmental performance of the supplier and social performance of the supplier.

Working with a local supplier may be of value. Some suppliers offer a number of services along with the direct supply of energy, some of which may be valuable to your council. These include:

- Undertaking audits across the council portfolio enabling you to identify which properties can benefit most from energy reduction programmes. This is particularly valuable if you have yet to assess your portfolio and you do not have inhouse skills in energy management.
- Assessing the opportunities for energy generation across the council portfolio.
- Supporting bill validation and consolidation activities.
- Ensuring regulatory compliance

Consider a checklist for procurement tenders, including requirements around monitoring and targeting and data management. Some PBOs also offer social benefits and have a commitment to supporting the local economy in which they operate. Also consider an energy innovation or social value requirement within any tender specifications, to support council objectives such as green jobs, local energy generation, CO_2 reduction activities or fuel poverty alleviation.

When working collaboratively with a number of councils, the key considerations for this are similar to those described above, but consideration should also be given to the

alignment of needs of all the councils and not simply procurement on 'the coat tails' of the lead council.

For resources relating to internal procurement of energy, please see Appendix C1.

Case studies

Manchester City Council procure their own energy, using their in-house skills and resources. They also procure energy for Bolton Council as well as local schools (including academies) and other public sector clients including higher education establishments. The energy team within Manchester City Council provide an in-house energy service, including:

- procurement of energy from the market
- bill receipt verification
- data management, with links to monitoring and targeting functionality
- engineering based technical support, including building management systems (BMS)
- advice on energy use in buildings for facilities managers, using data to reduce consumption and challenging council employee behaviours
- supporting and influencing with capital investment programmes, including energy efficiency retrofit.

Manchester City Council also work in collaboration with all councils across the Greater Manchester area to undertake market testing and retrospective reviews of energy supply contracts.

The London Borough of Islington offers a range of energy services to cross-sector customers. One of these is an independent purchasing service using innovative buying techniques to deliver value for money with no upfront cost. This includes:

- detailed market analysis to identify the best time to purchase
- obtaining lowest prices from a panel of vetted suppliers
- varying contract lengths and offering fixed or flexible purchasing
- varying buying strategies according to clients' appetite for risk or price certainty
- negotiation with suppliers around terms and conditions
- aggregated gas purchasing
- standalone energy purchasing or combined with site visits, energy audits and efficiency recommendations
- supply of energy management data for CRC or internal reporting
- assistance with invoice disputes.

http://democracy.islington.gov.uk/documents/s4644/Exec%2018%206%2015%20Procurement%20Strategy%20for%20Energy%20Purchasing%20final.pdf?utm_content=assemblyhall.studioparallel.co.uk|referral

The London Energy Project (LEP) is a public-sector collaboration, funded on a cooperative, cost recovery basis by its 35 participating authorities, including both councils and emergency services, which have complex, large, multi-site property portfolios (including schools, housing and corporate sites). LEP manages approximately 48,000 supply points and spends around £450 million per year on energy.

LEP aims to keep energy affordable; minimise risk; reduce procurement, contract operation and back-office costs; manage compliance and statutory responsibilities; maintain a capable and agile workforce; and to use their market share to enable all members to achieve greater benefits more quickly and with reduced risk than if acting alone or in small groups.

Energy prices, especially in flexible contracts, can be difficult to understand, and therefore LEP conducts independent and specialist commodity market analysis and provides benchmarks of buying organisations' energy prices so that councils

can be sure that they are getting value for money and take action where they are not.

LEP works extensively with staff and senior managers from various business units with the authorities group, such as procurement, finance (including accounts payable), energy, housing and corporate services, to ensure that products and services meet their expectations. Service, quality and value requirements are met through OJEU compliant, authority focussed energy supply contracts. These offer value for money, supported by favourable terms and conditions that are aimed at achieving best overall commercial outcomes.

They are underpinned by an effective ongoing framework and supplier and contract management to ensure continuous improvement.

LEP's unmetered supplies review service is designed to assess how councils can manage the complex end-to-end administration and verification process, from physical 'on street' work, through updating inventories, to processing, and to validating and paying energy bills. For example, LEP found that one council had not used the correct charge codes that identify street light energy consumption and times of use. Following the review, the council's entire inventory was updated and energy bills were reduced by approximately £45,000 per year. Another review by LEP identified that old ticket machines, replaced by new solar powered ticket machines, were continuing to be charged resulting in an overpayment of £20,000 per year.

LEP is looking to increase their community of authorities, including those based outside of London, to redress the balance of a dominant supply market and increase their collective influence in the energy sector. For further information, please contact londonenergyproject@haringey.gov.uk, call 020 8489 1102 or visit: www.londoncouncils.gov.uk/londonenergy

Using professional buying organisations

Many councils purchase energy using public buying organisations (PBOs) who procure on their behalf. The PBOs negotiate on behalf of the council and provide additional services in the management of energy, in particular delivering accurate billing. Many PBOs are collectively owned by councils.

Councils, and the wider public sector in general, have huge buying power and are also highly desirable customers for suppliers given the guarantee and reliability of payment, something that many businesses cannot offer. Utilising category expertise, PBOs are a recognised way of benefitting from this position. It is also important that local authorities understand that the category expertise that PBOs offer does not stop at price negotiation, or achieving the lowest price, but extends far wider to contract management with suppliers, billing management and energy management.

There are a number of PBOs, including:

- Eastern Shires Purchasing Organisation (ESPO)
- LASER Energy Buying Group
- North East Procurement Organisation (NEPO)
- West Mercia Energy
- Yorkshire Purchasing Organisation (YPO)
- Crown Commercial Services (CCS).

Councils may also consider using energy brokers for the procurement of their energy. There are about 2,000 brokers operating in the UK market and they primarily serve small and medium sized organisations, although some councils are known to use brokers.

Historically, brokers sold fixed term standard contracts over periods of 12, 24 or 36 months. There are now three main types of contracts that brokers offer:

1. fixed fee – a broker charges a fixed fee for the service that they offer

2. hybrid offer – the broker's costs are built into the unit cost of energy
3. inclusive – the cost of the service is built into the unit cost of energy, but not separately identified, therefore, the buyer may not be aware of the actual cost of the service.

Councils should ensure that broker's costs are transparent, and procurement officers should be able to see what they are paying for in terms of energy and the broker's services.

Key considerations

PBOs have significant buying power and some have direct relationships with suppliers, which may add to the value to the council.

It is important to benchmark the various offers of the PBOs and to ensure that they offer the services that the council requires, plus a good customer service offering.

Is the broker independent? Generally, brokers' fees come entirely from buyers, but there may be cases where brokers are incentivised to promote certain supplier's products.

Some smaller brokers may not have access to all of the supplier offerings.

As noted above, when working with a buying organisation or broker, you should be focusing on the advice they can give you on what is a good time to go to market, how best you can package your requirements, and what attitude to risk you have; rather than just what unit price they can get you.

What additional services does the broker offer? The services that PBOs can offer to councils include:

- Undertaking audits of buildings enabling the council to identify which elements of their building stock can most benefit from energy reduction programmes. This is particularly valuable if a council has not done this before and does not have in-house skill in energy management.
- Contract management support with the energy supplier to ensure that the council obtains the best deal in an ever-changing market. The council will need to be clear in its requirements when working with the PBO, and will need to manage the relationship and associated contract with the PBO.
- Bill validation and consolidation services, which can remove overheads for the council and enable good forecasting.
- Determining monetary, carbon and wider social, economic and environmental savings, which can then be linked to council objectives and targets.

Case studies

As outlined previously, the Public Services (Social Value) Act transformed the way public bodies buy services. All public bodies in England and Wales are now required to consider how the services they commission and procure might improve the economic, social and environmental wellbeing of the area. PBOs understand the social value requirements of councils and therefore have developed appropriate offerings to their clients, one of which is detailed below.

The **North East Procurement Organisation** (NEPO), which is owned by several councils in the north east of England, has a social value delivery group (SVDG) to ensure that social value is included within procurement activities and that outcomes are achieved during delivery. This includes:

- creating opportunities for improvement in the living standards of north east residents by encouraging suppliers to use local supply chains and source labour from the north east to maximise the 'multiplier effect' in the north east economy
- promoting employment and economic sustainability by tackling unemployment and labour market inactivity through the creation of jobs, skills, training and volunteering opportunities
- promoting opportunities for small and medium sized enterprises (SMEs), social enterprises and voluntary

and community organisations by encouraging closer working practices between sectors and more 'social innovation' in commissioning

- promoting inclusion and targeting efforts towards those in greatest need or located in deprived areas in the north east
- positioning social value as an intrinsic part of the sustainability agenda by ensuring that all three pillars of economic, social and environmental sustainability are considered in procurement activities.

www.nepo.org

Energy supply

The energy market has changed significantly in recent years. Whilst the market is still dominated by the big six energy companies (British Gas, EDF Energy, EON, nPower, Scottish Power and SSE), there are a growing number of new smaller suppliers, some of whom have significant customer numbers, supplying both domestic and non-domestic customers.

It has become simpler to operate in the energy supply market, and there are a number of ways in which a council can be involved:

- **White label supplier approach**. This involves branding a major supplier's energy as your own. Primarily focused upon domestic retail customers, this can provide the local authority with an income stream.
- **White label switching approach**. This involves branding a tariff switching service as your own. Primarily focussed upon domestic retail customers, this can provide the local authority with an income stream.
- **Becoming an energy supply company**. This requires an energy license and can deliver the greatest benefits in terms of income and social value, but has risks associated with it that need careful management.

White label supplier approach

This approach brands the offers of a supplier as those of a third party. Examples include:

- Marks & Spencer energy –- supplied by SSE
- Sainsbury's energy – supplied by British Gas.

The license for the supply of energy remains with the energy supplier but the third party, in this case the council, lends its brand to the offer and can customise it to a certain extent to reflect the needs of its customers. Councils can expect to receive an income stream from the partnership.

Key considerations
There are brand and reputational risk associated with this that need to be managed. This is a popular market proposition but it can be seen as risky due to a recent high profile example. AgeUK, who promoted energy from E.ON, were recently investigated by energy regulators due to claims that the energy deals they offered to their members were more expensive than other tariffs from the supplier.

Considerations include:

- What are the objectives for the council in this area?
- What income stream can be generated for the council and how will the relationship with the energy supplier be managed?
- What are the costs of offering this type of service and what are the management overheads?
- Will customers get the best energy deal from this?
- Some customers may be happy to use a council as energy provider and this can deliver real benefit financially to them if they have not switched before.
- Will this assist in reducing fuel poverty in the council area? (Eg does the supplier offer the Warm Homes Discount Scheme?)
- Will there be any wider social, economic and environmental benefits?

It is important to understand that customers can see the council as their supplier, whilst this is not actually the case.

For resources relating to a white label supplier approach, please see Appendix D1.

Case studies

There are a number of council led white label supplies, including:

- Peterborough Energy[16], Southend Energy[17] and Energy South West[18] all provided by OVO Energy.
- White Rose Energy[19] provided by Robin Hood Energy.

White label switching

This involves branding a tariff switching service as belonging to the council. These types of service are primarily focused on the domestic sector, but can include non-domestic supply. Councils can expect to receive an income stream from the partnership.

Key considerations
There are brand and reputational risk associated with this that need to be managed. Key considerations are similar to those listed for white label supplier schemes (see above).

Case studies

Portsmouth City Council provide a switching service for residents in partnership with UK Power: www.portsmouth.gov.uk/ext/news/putting-our-energy-into-saving-you-money.-switch-and-save-today!.aspx

Becoming an energy supplier

A council may choose to become an energy supplier in its own right. Many new organisations have entered the retail energy market. The process for this has become simpler (often known as Supplier in a Box™ Utiligroup) and the regulator has generally been positive about this type of activity in the market: www.utiligroup.com/new-entrants

An additional Industrial and Commercial (I&C) license is required for non-domestic supply.

Key considerations
There are brand and reputational risk associated with this that need to be managed. Key considerations are similar to those listed for white label supplier schemes (see above).

For resources relating to becoming an energy supplier, please see Appendix D2.

Case studies

Robin Hood Energy has been launched by Nottingham City Council: https://robinhoodenergy.co.uk

Enfield Council is investing £58 million in 'energetik', its local energy company, to supply low carbon heating and hot water to 15,000 homes. The scheme will provide £225 million of economic, environmental and social benefits to residents and businesses across Enfield: https://new.enfield.gov.uk/news-and-events/enfield-council-to-invest-58m-in-energetik-its-loc/

Mutual and Municipal Energy (MME) believe in the municipalisation of utilities to give people a real stake in their energy supplier, and prioritise the needs of domestic and business consumers in local communities. MME are partnering with a number of organisations, including councils and charities, and partners will be able to generate income for reinvestment in communities; supporting local business growth and those in fuel poverty. MME has produced a document outlining partnering opportunities: http://mutualandmunicipal.com/images/brochure.pdf

16 www.peterboroughenergy.co.uk
17 www.southendenergy.co.uk
18 www.energysw.co.uk
19 www.whiteroseenergy.co.uk

Collaboration

Collaboration amongst public sector bodies across any – or all – of the themes discussed here can bring benefits. Sharing the workload of developing a new initiative can make action possible; understanding legislative drivers can ensure effective compliance; sharing expertise and information about both good and bad practice can improve quality; and grouping together for procurement can produce better value offers and begin to change the market.

Collaboration happens most often between geographically close organisations. It can involve councils in different tiers (county councils collaborating with districts); it can also involve councils working with other public sector bodies (such as health trusts, higher education establishments, and the police and fire services). While partners can have different portfolios and energy spends, there will be joint working opportunities, and while a number of stakeholders involved in this project noted that 'big is not always best', working together can have its advantages.

Long-distance collaboration can and does also happen. Councils from different European countries may work together to share ideas and experiences, particularly in areas where action is relatively new to some of them.

Key considerations

- Do not underestimate the time and effort needed to set up and maintain a good collaboration: the outcomes in terms of more efficient and more effective energy projects will be worth it, but they will not happen without it.
- For any given project, some within the group will be able to contribute more than others, depending on expertise, political support and hence time available, and budgetary constraints.
- The organisations choosing to collaborate on one energy-related project may not do the same for all local energy projects: it is important to ensure that, for any project, you have clear objectives and that these are shared amongst all the organisations that are working together.
- Taking time to develop suitable governance for any collaboration is important to ensure a shared understanding of roles and responsibilities.

Case studies

The councils within the Greater Manchester Combined Authority have worked collaboratively on a number of energy issues in recent years. This collaboration was previously through the Association of Greater Manchester Local Authorities (AGMA) and is now through the **Greater Manchester Low Carbon Hub**. The intention of the collaborative working has been to deliver projects more cost-effectively than individual councils and other partners could do if they worked alone: http://gmlch.ontheplatform.org.uk

Cambridgeshire County Council has been leading a £20 million 'Mobilising Local Energy Investment' programme, which seeks to deliver energy efficiency projects across public buildings in the county via Energy Performance Contracts. The county council has worked closely with the county's district authorities to ensure the benefits of the programme can be accessed across the county, with retrofit projects facilitated in Fenland District Council, Huntingdonshire District Council and Cambridge City Council. For example, in the city, this has resulted in two multi-storey car parks being retrofitted with energy efficiency measures, resulting in a 17 per cent reduction in energy consumption saving £41,800 a year (giving a six year payback): http://localpartnerships.org.uk/wp-content/uploads/2016/11/Cambridgeshire-City-Council-%E2%80%93-Car-Parks.pdf

How the LGA and NAG can support delivery

The National Advisory Group for Local Government Procurement (NAG) and the Local Government Association (LGA) want to support delivery in this sector through direct actions and encouraging collaboration.

- Sharing good practice across the local government sector. This includes the development of:
  - toolkits, including how to build a business case and how to trade in the energy market, and 'deep dives' into individual topic areas referenced within this strategy
  - comprehensive case studies
  - Training to upskill local government personnel
  - information on how to benchmark savings and services, and key requirements that councils should require of PBOs, third party intermediaries and energy suppliers.
- Supporting the visibility of free services to local government (eg Carbon Trust, but also highlighting services from energy suppliers that are in contract with councils already).
- Fostering council collaborations.
- Promoting energy related national government activity and policy development, to ensure that councils can understand how changes to the market could impact on them, eg engagement with members on a wide variety of consultations.
- Promoting Local Partnerships – a joint venture between HM Treasury and the LGA – to help the public sector deliver at the local level in supporting the delivery of investment in local infrastructure and local services: http://localpartnerships.org.uk
- Helping councils and funders to collaborate on procurement. For example, making sure that the structure and timing of funding does not result in lots of councils procuring the same expert services at the same time, potentially resulting in lower quality or higher cost bids being successful due to supply shortages, and to help avoid duplication of efforts to secure best value for all concerned.
- Consider how the provision of indicative return on investment (RoI) figures for councils can help councils to achieve best value.
- Consider how to ensure further transparency in the market (for example, providing benchmark pricing for technology and PBOs, third party intermediaries and energy suppliers).
- Facilitating discussions with relevant stakeholders about developing a set of suggested KPIs for councils to use in this field.
- Working with government to ensure clear guidance about use of data; at the moment, there is sometimes triple or even quadruple handling of the same data because of government requirements, which is inefficient.
- Working with government to streamline policies and reduce resource demands on councils; eg data and toolkits; there are currently different teams working with different requirements.

Appendix A: Reduce your energy demand – resources

A1. Monitoring and targeting

Carbon Trust – Monitoring and targeting guide
This guide presents monitoring and targeting from two perspectives:

- routine use (on a weekly cycle, for example), which is quick and simple and requires no particular expertise on the part of the user
- target-setting and diagnosis for users who want to analyse data in more depth.

www.carbontrust.com/resources/guides/energy-efficiency/monitoring-and-targeting/

A2. Employee engagement

Empower – Carbon Trust
The Carbon Trust offers support to help engage with employees to reduce energy use, carbon emissions, water and waste, and ultimately reduce bills.
www.carbontrust.com/resources/tools/empower/

nPower – Carbon Psychology
nPower can analyse the behaviour of staff and identify the most relevant interventions to ensure efficiency measures are adopted.
www.npower.com/business-solutions/energy-hq/behavioural-change/carbon-psychology/

A3. Retrofitting energy efficiency measures across the council portfolio

The Carbon Trust offers a wide range of resources and services.
www.carbontrust.com/client-services/

www.carbontrust.com/client-services/advice/public-sector-advice/

Energy management self-assessment tool
Assess where you are on the energy management journey with the energy management matrix and assessment workbook.
www.carbontrust.com/resources/tools/energy-management-self-assessment-tool/

Local authorities – Saving energy in local authority buildings
This overview for local authorities introduces the main energy saving opportunities for the sector and demonstrates how simple actions save energy, cut costs and make the most of budgets.
www.carbontrust.com/media/196392/ctv028-local-authorities.pdf

Salix operates a number of interest-free loan programmes for the public sector across the UK.
www.salixfinance.co.uk/

The Salix Recycling Fund aims to increase investment in energy efficient technologies across the public sector. It is a ring-fenced fund with capital provided by Salix, and matched by the partner organisation, to be spent on energy saving projects with paybacks of less than five years.
www.salixfinance.co.uk/recycling-fund

ADEPT Street Lighting Working Group
The Association of Directors of Environment, Economy, Planning and Transport (ADEPT) have a Street Lighting Working Group and the webpage has a wide range of resources available including toolkits and case studies.
www.adeptnet.org.uk/groups/street-lighting-working-group

A4. Energy Performance Contracts (EPCs)

Guide to Energy Performance Contracting best practices
This guide helps to identifying points for consideration in relation to Energy Performance Contracting, based upon experience from several projects within the UK public sector.
www.gov.uk/government/uploads/system/uploads/attachment_data/file/395076/guide_to_energy_performance_contracting_best_practices.pdf

Energy Performance Contract (EPC): contract guidance note and model contract
This guidance note is to help support organisations understand the overall structure and certain specific areas of the Model Contract for Energy Performance Contract (EPC).
www.gov.uk/government/publications/energy-performance-contract-epc

A5. Energy efficiency procurement standards

The Energy Technology List (ETL)
The ETL is a government-managed list of energy-efficient plant and machinery, such as boilers, electric motors, and air conditioning and refrigeration systems.
www.gov.uk/guidance/energy-technology-list

Crown Commercial Service – public procurement policy guidance
An outline of directives, regulations, policies and guidance relating to the procurement of supplies, services and works for the public sector.
www.gov.uk/guidance/public-sector-procurement-policy

Appendix B: Energy generation

B1. Generating energy

Local Partnerships
'Local Energy Options – A Guidance Document for Local Government' provides guidance to help inform councils about the scale of opportunity available in the changing energy sector.
http://localpartnerships.org.uk/wp-content/uploads/2016/12/Local-Energy-options-guide-web-version-1.pdf

Financing renewables
CLASP has produced a briefing for councils on financing large scale investment in renewables.
http://claspinfo.org/financing-large-scale-renewable-energy

The Association for Decentralised Energy (ADE)
ADE provides a range of resources related to decentralised energy including CHP, district heating and demand side response.

www.theade.co.uk/resources

APSE Energy
APSE Energy's Local Authority Energy Collaboration is a partnership developed by member authorities to bring councils together on a national scale to work on the green energy agenda. Currently, around 60 councils are members of APSE energy. Members receive a range of benefits including support on infrastructure projects such as renewable micro generation schemes and energy networks.
www.apse.org.uk/apse/index.cfm/local-authority-energy-collaboration/about/

The Carbon Trust
The Department for Business, Energy and Industrial Strategy (BEIS) commissioned the Carbon Trust to produce a guide to stakeholder engagement in heat networks. The guide will help councils and other project sponsors understand how better stakeholder engagement can improve project outcomes, and how to put the theory into practice. It offers advice on making the best use of internal resources and how and when to procure external support, including a template procurement specification. Contact publicsector@carbontrust.com for further information.

ESCOs
Clean Energy Hub has produced a series of articles for local authorities about ESCOs.
www.cleanenergynews.co.uk/blogs/solar/escos-the-options-for-local-authorities-1247

Energy from waste
The Department for the Environment, Food and Rural Affairs (Defra) has produced guidance on energy from waste (EfW). This includes information on different aspects of EfW technology, the purposes and functions of EfW facilities and guidance on how an EfW strategy might be implemented.
www.gov.uk/government/uploads/system/uploads/attachment_data/file/284612/pb14130-energy-waste-201402.pdf

The Renewable Energy Association has produced a guide to energy from waste.
www.r-e-a.net/pdf/energy-from-waste-guide-for-decision-makers.pdf

B2. Energy storage

Parliamentary Office of Science and Technology
This 2015 briefing outlines the roles of energy storage in the electricity, heat and transport sectors and describes the technologies used from the household level up. It also discusses current barriers and policies for energy storage and potential future uptake.
http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-492

Renewable Energy Association
The REA's report Energy Storage in the UK: An Overview (2015) provides more detail on applications. www.r-e-a.net/upload/rea_uk_energy_storage_report_november_2015_-_final.pdf

B3. Demand side response (DSR)

Power Responsive
Power Responsive is a stakeholder-led programme, facilitated by National Grid, to stimulate increased participation in the different forms of flexible technology such as DSR and storage. It has a range of resources to help organisations interested in participating in DSR services.
http://powerresponsive.com

A short guide to how your business can profit from demand side response
Power Responsive has produced this guide to help organisations understand what DSR involves and how they can benefit from participating in DSR services.
http://powerresponsive.com/wp-content/uploads/pdf/Power%20Responsive%20Guide%20-%20v8.pdf

Profiting from demand side response
A guide by the Major Energy Users Council on how to benefit from DSR.
http://powerresponsive.com/wp-content/uploads/2016/11/ng_meuc-dsr-book.pdf

Appendix C: Energy procurement

C1. Internal procurement of energy

Ofgem provide guidance on understanding non-domestic energy contracts.
www.ofgem.gov.uk/consumers/business-gas-and-electricity-guide/understand-energy-contracts-businesses

The Energy Managers Association's Guide to Electricity Procurement offers an overview of the energy procurement process and principles for best practice.
www.theema.org.uk/wp-content/uploads/2015/12/Energy-Managers-Guide-to-Electricity-Procurement.pdf

The Government offers guidance and services in energy procurement for public sector organisations through the Crown Commercial Service (CCS). CCS agreements are in line with the findings of the Pan Government Energy Project, which recommends that all public-sector organisations adopt aggregated, flexible and risk-managed energy procurement. CCS takes the delegated authority to purchase gas and electricity on behalf of central government and wider public sector organisations, creating an aggregated committed volume to take to the wholesale market.
www.gov.uk/guidance/buying-energy-options-for-public-sector-buyers

C2. Using professional buying organisations and other intermediaries

Energy switching service
Crown Commercial Services (CCS) will be launching an online energy price comparison and switching website for lower consuming public-sector customers. The website will follow the concept of an energy price comparison website, much like those that are used in the domestic energy sector. The service will make it easy to choose and switch to a gas, electricity or dual fuel tariff that meets your organisation's needs, for example the cheapest price or green energy. Further information on this service can be found online or by contacting: gov-switch@crowncommercial.gov.uk
http://ccs-agreements.cabinetoffice.gov.uk/procurement-pipeline/energy-switching-services

Utilities management software, metering and ancillary services
Scheduled for launch in autumn 2017, Crown Commercial Services (CCS) new utilities management software, metering and ancillary services framework will provide a full end-to-end data management solution for all utilities requirements, including a bureau services provision. This will provide users with key information to unlock savings and efficiencies across their utilities portfolios. The framework will remove the need for councils to individually go to market by centralising demand, enabling councils to benefit from reductions in procurement costs. The framework also standardises data quality and frequency across all utilities through access to high quality, pre-qualified suppliers. Further information can be found online or by contacting: utilitiesmanagement@crowncommercial.gov.uk
http://ccs-agreements.cabinetoffice.gov.uk/procurement-pipeline/metering-solutions-and-utilities-management-services-software

Appendix D: Energy supply

D1. White label supplier approach

Ofgem recently consulted on white label suppliers and have published a review as a result.
www.ofgem.gov.uk/publications-and-updates/treatment-white-label-providers-domestic-retail-market

D2. Becoming an energy supplier

UtiliGroup supports organisations to become an energy supplier through their Supplier in a Box™ proposition.
www.utiligroup.com/new-entrants

The Government has published guidance for independent energy suppliers.
www.gov.uk/guidance/independent-energy-suppliers

Ofgem has produced guidance for independent energy suppliers.
www.ofgem.gov.uk/about-us/how-we-engage/engaging-industry/independent-energy-suppliers

Appendix E: A councillor's guide

Introduction

Councils spend around £773 million each year purchasing gas and electricity, and the cost of these fuels is rising.

There are significant cost-effective opportunities for councils to reduce their spend on energy by investing in energy efficiency, improving energy procurement practices, and participating more actively in the energy market. There are also opportunities for councils to generate income from their energy related activities.

What difference can taking action make?

Energy action by councils can offer benefits to the councils themselves, and to their local communities.

- Protecting council finances:
  - procure gas and electricity at lowest cost
  - reduce spend through investment in energy efficiency
  - generate income by investing in revenue-generating technology such as renewable energy, participating in the electricity capacity market, setting up authority council-owned energy supply company.
- Supporting local economies:
  - help local businesses cut costs and increase competitiveness by working with them to help them reduce their energy demand and procure energy at best cost
  - include clauses within procurement strategies that seek to reward providers who will benefit the local economy; eg those offering practical training opportunities or apprenticeships
  - invest in local renewable energy generation which can be linked to local jobs in for installation and maintenance
  - buy energy from, or invest in, local community energy schemes.
- Minimising environmental impact:
  - reduce energy demand through efficiency measures
  - purchase clean energy and/or generating clean energy.

Key questions councillors should ask

About energy use:

- What does the council spend? Where are there opportunities to make changes?
- Is there a team internally that manages energy? If not, is there someone who could help with this, eg with a sustainability or climate change function?
- In terms of technologies:
  - Are street lights LED?
  - Have charging points for electric vehicles been installed?

About energy contracts:

- Have we secured a Best Value contract? How is that demonstrated, eg:
  - Have we compared it with the best in class?

- How will Best Value be assessed going forward (as circumstances change)
- If a supplier is offering a free service (eg bill validation), has there been an investigation about how this is actually paid for (given that nothing is actually free)?
- Is the process transparent? Are there any hidden charges, margins (eg in the case of energy from waste, there are charges for energy generation but also charges for councils to deliver waste)
- Has a benchmarking exercise been undertaken and, if so, how? eg was it based on a particular date and criteria to ensure a comparison of like with like? Since much of the energy price is commodity driven, savings on last year's costs are irrelevant

- What is the approach to market and what alternatives were considered?
  - Is it a fixed or flexible contract?
  - How is the deal structured in terms of risk, and are the risks outlined up front?
- Do we need to take appropriate external advice to understand/comprehend how the industry operates and what opportunities there are?

About ways of working on energy projects:

- Has collaboration with other councils/public sector organisations been considered?
  - Is the council working with other councils in the area, to pool resources and maximise market power?
  - Is the council working with housing providers and schools (including academies) to provide them with support and help them access Best Value energy, for example through buying via the council?
  - Are there other organisations that could be brought into the council's buying group? (One consortium of councils uses the criteria, 'Would the council have to step in if that organisation failed? If so, then they could be added in to the buying group.')

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